



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

With these principles in view, and guided by them, our author then discusses with great originality, and chiefly by the experimental method, locomotion in general, that of man and the horse, and finally the flight of insects and of birds.

PEIRCE'S IDEALITY IN THE PHYSICAL SCIENCES.¹—It is commonly said by pulpit orators and metaphysicians of the transcendental school, that physical science is lowering and materialistic, that it is concerned with facts alone, and physical, material laws, and that its study tends to deaden the finer sensibilities of the mind and to weaken the grasp of the intellect. How incorrect such a notion is, every thinking scientist realizes; his mind, observant of facts in nature, is continually on the alert, endeavoring to ascertain the meaning of those facts; he is constantly rising from the seen to the unseen; from the actual to the ideal. The late Professor Peirce, whose life was devoted to the study of mathematics, to dry computations carried on year after year, in these posthumous lectures, tells us in impassioned, eloquent words, which every scientist should read, that facts organized into theory "ascend to the very throne of ideality." And if the highest researches of the mathematician are especially transcendental, how much more ideal and transcendental, we would add, become the researches of the biologist, who is concerned with the elusive and subtle laws of life and the mental and spiritual forces of man. No wonder, for example, that the thinking world is profoundly moved by the ideas suggested by evolutionists, and by the study of the origin of things material, for these problems touch upon the deepest, most insoluble problems of man's nature.

The general student of geology and biology will also read this fascinating volume for the sake of the author's views regarding the nebular hypothesis and general cosmogony. Professor Peirce may be regarded as one of the founders of the nebular hypothesis in its modern form. In this book he guides us through the successive steps in nebular history—from chaos to nebula, from nebula to star, and from star to planet.

The author in beginning his exposition of the nebular hypothesis, regards the first chapter of Genesis, rightly interpreted, as "a profound cosmogony. It may not be the revelation of an actual fact, but it teaches where that revelation is to be found; that it is engraved on stone by the all-wise Author; that it is written in the sun, moon and planets; that it is inscribed on the sidereal universe, and that every star is an oracle of God." Coming to the nebular theory, the author treats of nebulosity, of a nebula proper, a cluster, the Milky Way, the Magellanic cloud, of an annular nebula and a spiral nebula; then of the star, and finally the planet, comet and meteor. Geologists will be interested in this philosopher's views as to the cooling of the earth and the

¹ *Ideality in the Physical Sciences*. By BENJAMIN PEIRCE. Boston, Little, Brown & Co., 1881, 12mo, pp. 211.

sun. After a discussion of Thompson's views upon the cooling of the earth, the author gives his reasons for not accepting his explanation of the process of solidification, with its corresponding limitation of the geological ages. Peirce believed that there was a permanent superficial solidification at an exceedingly early stage of the process, together with the formation of an interior solid nucleus. "These interior and exterior solid portions will be separated by a liquid stratum, which is ever decreasing in thickness, to supply the increasing solidity above and below it." Hence the larger portion of the earth's interior being liquid, the earth must have become solid in a vastly greater length of time than Thompson supposes, "and no physical obstacle can mathematically be interposed to embarrass the researches of geologists, to interfere with their ages of erosion, and to diminish the possibility of an increased duration of organic life."

Turning then to the current view that the sun is not more than 20,000,000 years old, our author believed that by computation the age of the sun may have been twenty-five times greater than the estimates of some distinguished astronomers and physicists.

The concluding chapter on potentiality is replete with suggestions by a Christian philosopher for arguments for the existence of a Creator and the immortality of the soul; and the volume is well worth reading, not only for the invaluable exposition of the nebular hypothesis, but as a proof that the legitimate results of speculative evolutionary science tends to demonstrate the existence, outside of the material world, of a Creator and of a spiritual world, where the soul of man, "whose only life is action," freed of its physical scaffolding, however important in the beginning, may hereafter engage in ceaseless intellectual as well as spiritual activities.

NEW ENGLAND BIRD LIFE.¹—There has never been published anything like a complete exhibition of New England bird-life. Samuels' work,² the first attempt at it, was very successful as a popular ornithology, but was hardly worthy of its success; while Minot's later volume,³ meant for a substitute, was incomplete, designedly omitting all the water-birds, and seemed to many wanting in precision and authority. The last work, just published (its title is given below), is by Mr. Winfrid A. Stearns, son of the late President of Amherst College. It should be welcomed as a concise, clear and careful summary of our knowledge of New England birds. In freshness, and individuality, and fullness it may seem wanting, though not in occasional picturesqueness. As a di-

¹ *New England Bird Life, a Manual of New England Ornithology.* By WINFRID A. STEARNS. Revised and edited by Dr. ELLIOTT COUES. Published by Lee & Shepard of Boston, and Charles T. Dillingham of New York. Part I. Oscines (1881): pp. 324, illustrated. \$2.50.

² "Ornithology and Oölogy of New England." By Edward A. Samuels. (1867.)

³ "Land-birds and Game-birds of New England. By H. D. Minot. (1876-77.)